Two days Zonal level workshops on IoT using RaspberryPi

January 19-20,2018

Venue : Panimalar Institute of Technology, Chennai 600123

EVENT DETAILS

Stages of Event

Round 1: A Workshop will be organized at 30 different Zonal Centers/Colleges in India from Jun, 2017 to April, 2018.

Round 2: A Zonal Round Competition will be organized at the Zonal Centre on 2nd day of Workshop & two best performing team will get a direct entry to Final Round competition to be held at Technex'18 IIT Varanasi in Feb, 2018.

Round 3: A Final Round competition will held at Technex'18 IIT Varanasi among all the Zonal Centre winning teams in Feb, 2018 and winning team will get Certificate of Excellence & Prizes.

Objective of Workshop : The main objective of the workshop is to make the aspiring engineers acquainted with the conceptual as well as practical knowledge of IoT- Internet of Things. It is one of the Latest Technology which is going to change our lifestyle and the technology we use in coming years. It is an estimated that by 2020 approx 50 Billion electronics devices on this planet will be connected to internet.

Workshop Highlights

- ✓ What “the Internet of Things” means and how it relates to Cloud computing concepts
- ✓ How open platforms allow you to store your sensor data in the Cloud
- ✓ The basic usage of the RaspberryPi environment for creating your own embedded projects at low cost
- ✓ How to connect your RaspberryPi with your Android phone.
- ✓ How to send data to the Internet and talk to the Cloud.
- ✓ How to update sensor readings on Twitter (Social Networking Sites).
- ✓ What “the Internet of Things” means and how it relates to Cloud computing concepts
- ✓ How open platforms allow you to store your sensor data in the Cloud
- ✓ The basic usage of the RaspberryPi environment for creating your own embedded projects at low cost
- ✓ How to connect your RaspberryPi with your Android phone ?
- ✓ How to send data to the Internet and talk to the Cloud ?
- ✓ How to update sensor readings on Twitter (Social Networking Sites)?
- ✓ How to control any device from anywhere across the world.

Topics to be Covered in Workshop

Day 1

Introduction to the Internet of Things

The Internet of Things

The Basics of Sensors & Actuators

Introduction to Cloud Computing

Understanding and Introduction to RPi

What is SOC?

Versions of Raspberry Pi & Their Difference

Raspberry Pi 3

Basics of Electronics

Hardware Description

Pin Configuration

OS Installation on SD Card

Downloading Image

Study Various Operating Systems Available

Making SD Card: Formatting and Partitions

Raspberry Pi SD Installer

OS Configuration

Booting Into Desktop

GUI Version

CLI Desktop

Changing Timezone

Other Options

Raspi-Config

Test

Network Setup

Setting Up Using GUI

Setting Up Using Command Line

Finding Pi's IP Address

Connecting with Wi-Fi/ LAN/ Datacard

GPIO

Study GPIO Pins

Libraries Using Git

Configuring GPIO Pins

Pi using SSH

Enabling SSH

Logging in using Putty

Run Basic Commands

Use GPIO

Linux

Understanding Linux

File Structure

Linux Commands

Permissions

Using Python

Understanding Python

Condition Statement

Loops

Importing Libraries

Functions

Project 1: LED Program with Raspberry Pi

Project 2: Controlling LED with a Switch using Raspberry Pi

Project 3: Integrating IR Sensor with Raspberry Pi.

Day 2

Project 4: Integrating DHT11 with Raspberry Pi.

Project 5: Reading Environmental Values on Android Smartphone.

Talking to your Android Phone with RaspberryPi

Connecting RaspbrryPi with Mobile Device.

The Android Mobile OS.

Using the Bluetooth Module

Project 6: Control Devices using Localhost Web Server for Home Automation

Integrating Ethernet Module & Testing DHCP Connection

Creating Program for Localhost Web Server for controlling devices.

Project 7: Sending Sensor Data to Cloud using Raspberry Pi.

Cloud Computing

Communicating with the Cloud using Web Services.

Cloud Computing & IoT.

Popular Cloud Computing Services for Sensor Management.

Project 8: Automatically Tweet Sensor Data on Twitter.
Project 9: Control Electronic Devices from anywhere across the world using Internet & Mobile App.

Duration: 2 Days (12-14 Hours)

Eligibility: This Workshop is best suited for Electrical, Electronics, Instrumentation, & CS/IT Branch Students. However students from other branches can also attend this workshop. The pre-requisite for joining this workshop is zero, anyone can participate in this workshop.

Certification: During this whole event following Certificate will be provided:

Certificate of Merit to all participants from Technex'18 IIT Varanasi & Innovians Technologies.

At the end of this workshop, a small competition will be organized among the participating students and winners will be awarded with a 'Certificate of Excellence'.

Certificate of Coordination for the coordinators of the workshops from Technex'18 IITVaranasi & Innovians Technologies.

Venue: Panimalar Institute of Technology

Fee: Rs 1300 (Rs 1200 for IEEE student members) per participant (without take away kit). In case of without takeaway kit fee module kit will be provided for hands-on (1 Kit in a Group of 4) during the workshop but at the end of workshop it will be taken back.

Register at : https://goo.gl/forms/vp6KrqWFdO6aZqHj2

Note : 1.A team must take a common Demand Drafts

2.PIT students can pay either DD or Cash to Mr.M.Arun/AP/ECE

3.Last date for filled up application is December 26,2017.

4.Seats are reserved based on first come first serve basis.

Schedule

Workshop timings : 8.30 am to 4.15 pm

Toffee Break : 10.15 am to 10.30 am

Lunch : 12.05 pm to 12.40 pm

Kindly Note :

- The registration fee is non refundable
- Maximum team size -4
- Participants need to bring their own laptop at least 1-2 laptop per team with working Wi-Fi, USB & LAN port. (**Exception applicable only to PIT students**)
- One Android Smartphone will be required per team with working Internet (3G Datapack) & Bluetooth in their phone.
- The fee includes workshop training, certification.

Mode of Payment:

DD or NEFT/IMPS/RTGS

DD: DD in favor of **PIT IETE** payable at Chennai.

(Specify your details at back of DD)

NEFT/IMPS/RTGS:

During Transaction through NEFT/IMPS/RTGS in Reference column specify your Name. Take the snap shot after successful transaction and mail us:

Bank Details :

Account Name: PIT IETE

Account Number: 060601 000 0000 10

Name of the Bank & Branch: IOB, Nazarathpettai, Chennai 600123

IFSC :IOBA 0000 606

For NEFT Use this mail Id & Phone Number

ganesh8461@gmail.com ,9941055728

Queries can be sent to 'pitrfid15@gmail.com'

Rules and Regulations

1. All team members should bring their College id card.
2. They should come in time as per the schedule.
3. Strictly come in formal dress code. (Participants are requested not to wear Jeans, T-Shirts etc.,)
4. No accommodation will be provided by us.
5. Transport and Hospitality will be provided by us.
6. They should obey the rules and regulations of our college.
7. Conformation will be sent based on First come first serve basis.
8. Outside vehicles are not allowed inside the Campus